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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,534	06/28/2002	Thierry Romanet	02058	9256
23338	7590	04/16/2004	EXAMINER	
DENNISON, SCHULTZ, DOUGHERTY & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314			GARBER, CHARLES D	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

10/088,534

Applicant(s)

ROMANET ET AL.

Examiner

Charles D. Garber

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/30/2004 has been entered.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard (UK Patent Application GB 2203844 A) in view of Hausler (US Patent 3,913,378).

Regarding claims 1 and 8, Leonard discloses pipe 5 with wall and outside surface shown in figure 1. The pipe is used for liquid or gas transport (page 1 lines 4-12). Heater 1 is a production source that will apply a thermal gradient to at least one active zone of the outside surface of the pipe and the thermal gradient will be transmitted substantially to the pipe wall. Temperature probes 3 will measure the heat flux in at least one zone of the outside surface of the pipe that is situated at a given distance from the active zone along the length of the pipe as shown.

However, Leonard does not expressly teach control and monitoring means. Also, Leonard, while detecting the heat flux corresponding at least in part to the applied thermal gradient and transmitted by the pipe, uses the signal to determine a level of fouling as shown in figures 2, 4-6 rather than deposits as in the instant invention.

Hausler discloses an apparatus with heater 11 and thermocouples 14, 15 for thermally measuring fouling. Hausler teaches processing and control means depicted in Fig 3. Hausler also teaches processing liquid shown in figure 1 being transported by the pipe. Deposits insulating the wall from the fluid are detected by the processing and control means (column 2 lines 38-56). Any measurable change in the heat transfer is indicative of the presence of an insulating deposit inside the pipe.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the detector of Leonard to detect fouling as it solves the

problem that immersed wire test probes have of with certain kinds of metal pipes with low temperature coefficient of resistance (column 1 lines 18-40).

As for claim 3, Hausler further teaches the test surface may have a curved surface to conform to the wall of the conduit. This would constitute applying the thermal gradient on a circumference of the pipe.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the thermal gradient on a circumference of the pipe as necessary to generally suit the "particular placement condition" of a round pipe (column 3 lines 36-40).

As for claims 4 and 6, Leonard shows the device with heat source and sensors fitted to the pipe in figure 1.

As for claim 5, Leonard shows several thermocouples 3 measuring the heat flux several sectors of a circumference of the pipe.

As for claims 7 and 9, Hausler teaches "the advantage of the present electrical readout system is that a single voltage output at 34 can provide a measure of the two variables ... This output, in turn, can be calibrated for any test apparatus to be indicative of the amount of material buildup on a particular metal surface.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to calibrate the heat flux measurement so that it may be used for any test apparatus and any particular metal surface.

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard (UK Patent Application GB 2203844 A) as modified by Hausler (US Patent

3,913,378) and applied to claims 1 and 8 above and further in view of Ludington et al. (US Patent 6,402,369).

Regarding Claim 2 and 10 Hausler fails to cycle the heat source. Ludington teaches the value of cycling the heat source (column 20 line 63 to column 21 line 27) wherein the heat capacitance is obtained from the amplitude (peak).

It would have been obvious to one of ordinary skill the art at the time of the invention to cycle the heat source because Ludington teaches that more information is in a cycled source.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard (UK Patent Application GB 2203844 A) as modified by Hausler (US Patent 3,913,378) and applied to claim 8 above and further in view of Baraona (US Patent 4,543,528).

The references as applied above do not expressly teach using a band for the source and measurement sensors. Baraona teaches plural test heads 50 on a flexible test assembly.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a band for the measurement sensors to in order to conform to the irregular surface of a test piece.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The additional references cited on the accompanying form PTO-892 though not cited above are provided to indicate other prior art devices thermally measuring material thickness which include one or more features or limitations in common with the instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

A handwritten signature in black ink, appearing to read "CDG" followed by a stylized flourish.